



New Mexico Ozone Precursor Rule Alternative Compliance Plan

Submitted to:
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New Mexico Alternative Compliance Plan

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1 Executive Summary

The New Mexico Environmental Department (NMED) proposed, and the New Mexico Environment Improvement Board (Board) adopted, the Ozone Precursor rule under 20.2.50 NMAC to reduce ozone precursor emissions—specifically nitrogen oxides (“NO_x”) and volatile organic compounds (“VOCs”)—at sources causing or contributing to ambient ozone concentrations that exceed ninety-five percent of the national ambient air quality standard for ozone. The Ozone Precursor Rule also sets carbon monoxide (CO) emission limits in conjunction with the NO_x and VOC limits. In lieu of meeting the emission standards established under 20.2.50.113 for stationary natural gas-fired combustion engines and turbines, owners and operators may elect to comply with the emission standards through an Alternative Compliance Plan (ACP) and/or an Alternate Emission Standard (AES) approved by the department.

Kinder Morgan, Inc. (Kinder Morgan) on behalf of itself and its subsidiaries and affiliates El Paso Natural Gas Company, L.L.C. (EPNG), Natural Gas Pipeline of America (NGPL), and TransColorado Gas Transmission Company LLC (TC) (collectively “Kinder Morgan”) request approval of an ACP for the stationary natural gas-fired combustion engines and turbines identified in Appendix A, attached hereto. The proposed ACP demonstrates that Kinder Morgan will achieve a greater reduction in emissions than if emission standards were applied individually to each engine or turbine separately. The proposed ACP does not include NMNEHC emissions because all units subject to 20.2.50.113 currently meet the NMNEHC standards established under 20.2.50.113 for existing stationary natural gas-fired combustion engines and turbines.

This ACP addresses CO emissions from all subject units in the Kinder Morgan fleet and NO_x emissions from units not addressed in the separately submitted plan for NO_x that comply with 20.2.50.113 NMAC through an Alternative Emission Standards, pursuant to 20.2.50.113(B)(11) NMAC.¹ Table 1-1 summarizes the total amount of allowable emissions under the proposed ACP compared to the total allowable emissions under 20.2.50.113 for existing engines and turbines. If approved by NMED Kinder Morgan will meet the total allowable emissions established under the emission standards of 20.2.50.113 by January 1, 2028, for both engines and turbines, a year before the compliance schedule outlined in the rule for engines. Under the proposed ACP, Kinder Morgan will achieve a total NO_x reduction of 731.3 tons by January 1, 2028. Of which, 92% of NO_x reduction will be in the Permian Basin.

¹ See Statement of Reasons, at 111 (Section 113 “offers significant flexibility for sources that are unable to meet the emissions standards of Part 50: they may reduce the annual hours of operation, they may seek an Alternative Compliance Plan ACP to meet an equivalent amount of emission reductions, **and/or** they may seek alternative emissions standards if they can demonstrate that they cannot meet the existing standards through an ACP”) (emphasis added).

Table 1-1 Comparison of Proposed ACP and 20.2.50.113 Total Allowable Emissions

Pollutant	Scenario	TPY Total Allowable Emissions	ACP Total Proposed Emissions Meet 20.2.50.113 Total Allowable Emissions?
NO _x	Proposed ACP	1,007.5	Yes
	20.2.50.113 Total Allowable Emissions ¹	1,064.6	
CO	Proposed ACP	597.1	Yes
	20.2.50.113 Total Allowable Emissions ¹	601.8	

1 - To be conservative, Kinder Morgan is using the lower of the current permit limits and the allowable mass emissions under the ozone precursor rule to establish the final allowable NO_x and CO emission rates for the ACP.

2 Regulatory Background

The Board adopted the Ozone Precursor rule under 20.2.50 NMAC to reduce ozone precursor emissions—specifically nitrogen oxides (“NOx”) and volatile organic compounds (“VOCs”)—at sources causing or contributing to ambient ozone concentrations that exceed ninety-five percent of the national ambient air quality standard for ozone. Sources located in Chaves, Dona Ana, Eddy, Lea, Rio Arriba, Sandoval, San Juan, and Valencia counties are subject to the rule. Kinder Morgan owns and operates multiple stationary natural gas-fired spark ignition engines and stationary natural gas-fired combustion turbines with a maximum design rating equal to or greater than 1,000 hp located at 12 different facilities in counties subject to 20.2.50 NMAC.

Applicable existing portable or stationary natural gas-fired spark ignition engines, compression ignition engines, or natural gas-fired combustion turbines shall meet the emissions standards in 20.2.50.113 listed in Table 2-1 and Table 2-2. Owners or operators shall comply with the emission standards for a specified percentage of all the company’s equipment subject to the standards by the dates specified in Table 2-3 below.

Table 2-1 Emission Standards for Existing Natural Gas-Fired Spark Ignition Engines

Engine Type	Rated bhp	NOx	CO	NMNEHC (as propane)
2 Stroke Lean Burn	>1,000	3.0 g/bhp-hr	0.60 g/bhp-hr	0.70 g/bhp-hr
4-Stroke Lean Burn	>1,000 bhp and <1,775 bhp	2.0 g/bhp-hr	0.60 g/bhp-hr	0.70 g/bhp-hr
4-Stroke Lean Burn	≥1,775 bhp	0.5 g/bhp-hr	0.60 g/bhp-hr	0.70 g/bhp-hr
Rich Burn	>1,000 bhp	0.5 g/bhp-hr	0.60 g/bhp-hr	0.70 g/bhp-hr

Table 2-2 Emission Standards for Existing Stationary Combustion Turbines

Turbine Rating (bhp)	NOx (ppmvd @15% O ₂)	CO (ppmvd @ 15% O ₂)	NMNEHC (as propane, ppmvd @15% O ₂)
≥1,000 and <4,100	150	50	9
≥4,100 and <15,000	50	50	9
≥15,000	50	50 or 93% reduction	5 or 50% reduction

Table 2-3 Engine and Turbine Compliance Schedule

Unit	30% Compliance Due Date	65% Compliance Due Date	100% Compliance Due Date
Engines	January 1, 2025	January 1, 2027	January 1, 2029
Turbines	January 1, 2024	January 1, 2026	January 1, 2028

In lieu of meeting the emission standards established under 20.2.50.113 for portable and stationary natural gas-fired combustion engines and turbines, owners and operators may elect to comply with the emission standards through an ACP approved by NMED. In particular, the Board adopted Paragraphs (10) and (11) of Subsection B of 20.2.50.113 NMAC “for the reasons stated in the NMED Rebuttal . . . and the supporting argument by Kinder Morgan.” State of New Mexico, Environmental Improvement Board, Statement of Reasons and Final Order, In the Matter of Proposed New Regulation 20.2.50 NMAC – Oil and Gas Sector – Ozone Precursor Pollutants, No. EIB 21-27, at pp. 111 (June 27, 2022) (hereinafter, Statement of Reasons). In particular, and citing to Kinder Morgan’s supporting argument in the Board rulemaking, the Board stated that “[w]hile the emissions thresholds provided in Tables 1 and 3 for existing engines and turbines are appropriate in most cases, circumstances may exist where it is technically impracticable or economically infeasible to achieve compliance.” *Id.* at 111. Recognizing these practical limitations, the Board’s final rule “offers significant flexibility for sources that are unable to meet the emissions standards of Part 50: they may reduce the annual hours of operation, they may seek an Alternative Compliance Plan ACP to meet an equivalent amount of emission reductions, and/or they may seek alternative emissions standards if they can demonstrate that they cannot meet the existing standards through an ACP.” *Id.* at 111 (emphasis added). Thus, an operator may have in place both an AES (or multiple AESs for individual units), and an ACP.

The purpose of this report is to meet the requirement from 20.2.50.113(10) as follows:

“In lieu of complying with the emission standards for individual engines and turbines established in Subsection B of 20.2.50.113 NMAC, an owner or operator may elect to comply with the emission standards through an Alternative Compliance Plan (ACP) approved by the department. An ACP must include the list of engines or turbines subject to the ACP, and a demonstration that the total allowable emissions for the engines or turbines subject to the ACP will not exceed the total allowable emissions under the emission standards of this Part.”

3 Alternative Compliance Plan

To establish a baseline of equivalent emission reductions per year, Kinder Morgan calculated emissions for each engine or turbine if it were to meet the emissions standard set in the ozone rule (20.2.50.113.B) on a unit-by-unit basis for those units covered by the ACP. The allowable mass emissions under the ozone rule are then compared to the current permit limits. To be conservative, Kinder Morgan is using the lower of the current permit limits and the allowable mass emissions under the ozone precursor rule to establish the final allowable NOx and CO emission rates for the ACP. Using the compliance schedule outlined in 20.2.50.113.B.2 for existing stationary natural gas-fired spark ignition engines and 20.2.50.113.B.7 for stationary natural gas-fired combustion turbines, Kinder Morgan determined the associated emission reductions for each year beginning with current permitted emissions, and projecting through January 1, 2029. This was then compared with the planned ACP schedule of emission control implementations.

Table 3-1 and 3-2 show the current permitted NOx and CO emissions for units addressed in the ACP, annual milestones required by 20.2.50.113 and achieved by the proposed ACP based on the schedules outlined in 20.2.50.113.B.(2) and (7).

Table 3-1 NOx Compliance Schedule under the Ozone Precursor Rule and the Proposed ACP

		Allowable Emissions under 20.2.50.113 (tpy)	ACP Proposed Emissions (tpy)
Current Permitted Emissions		1738.8	1738.8
20.2.50.113 Annual Milestones	1/1/2024	1718.5	1652.4
	1/1/2025	1536.5	1441.6
	1/1/2026	1512.8	1392.*
	1/1/2027	1300.6	1007.5
	1/1/2028	1276.8	1007.5
	1/1/2029	1064.6	1007.5
Final per 20.2.50.113		1064.6	1007.5

Table 3-2 CO Compliance Schedule under the Ozone Precursor Rule and the Proposed ACP

		Allowable Emissions (tpy)	ACP Proposed Emissions (tpy)
Current		1253.2	1253.2
20.2.50.113 Annual Milestones	1/1/2024	1192.2	1181.+
	1/1/2025	1057.8	1039.(
	1/1/2026	986.7	833.1
	1/1/2027	829.8	816.5
	1/1/2028	758.7	597.&
	1/1/2029	601.8	597.&
Final per 20.2.50.113		601.8	597.&

If approved by NMED, as demonstrated by Tables 3-1 & 3-2, Kinder Morgan will meet the total allowable emissions established under the emission standards of 20.2.50.113 by January 1, 2028, for both engines and turbines, a year before the compliance schedule outlined in the rule for engines and turbines.

NOx reductions will be attained by adding low emission combustion (LE) upgrades on selected engines, and exchanging a Solar turbine component with a lower NOx component on selected turbines. The LE upgrades include a software update and tuning on the controls. The Solar turbine component exchange includes installation of the Solar SoloNOx system. CO emissions will be reduced by installing oxidation catalysts on selected engines or submitting permit revision applications to establish lower CO permit limits based upon actual performance. The specific technology to be used on each unit is included in Appendix A.

Note, to be conservative, Kinder Morgan is using the lower of the current permit limits and the allowable mass emissions under the ozone precursor rule to establish the final allowable NOx and CO emission rates for the proposed ACP. In other words, Kinder Morgan is not claiming credit on reductions for existing units whose permitted limits are already below the allowable emission rates under the ozone precursor rule. Additionally, for each unit in the ACP, the proposed emission rate is provided on an hourly mass emission limit or performance limit basis consistent with the expected representation in the operating permits. These emission rates are converted to an annual basis assuming continuous operation (8,760 hr/yr). Emission reductions are calculated as the difference between the current permit limits and the proposed annual emission rate.

The ACP implementation or retrofitting schedule is depicted by the last column of Appendix A, to be completed in advance of the January 1 compliance date of the following calendar year.

Appendix A

ACP Control Technology Summary and Implementation Schedule

Appendix A: Control Technology Summary and Schedule

Compressor Station	Unit ID	Type	Current Permit Limits TPY		Ozone Rule Emission Standards g/hp-hr for engines; ppm for turbines		Total Allowable Under Ozone Rule (TPY)		Lower of Rule Emissions and Current Permit Limits (TPY)		Alternative Compliance Plan Summary	Total Emission Under ACP (PPH)		Total Emission Under ACP (TPY)		Total Reduction Under ACP (TPY)		Implementation Schedule By Year
			NOx	CO	NOx	CO	NOx	CO	NOx	CO		NOx	CO	NOx	CO	NOx	CO	
Caprock	A-01	Turbine	201.0	32.9	50.0	50.0	53.4	20.1	53.4	20.1	Subject to AES for NOx; Reduce CO permit limits to actual test results plus 20%	--	6.2	--	27.0	--	5.9	2024
Caprock	A-02	Turbine	172.1	34.5	50.0	50.0	32.9	20.1	32.9	20.1	Subject to AES for NOx; Reduce CO permit limits to actual test results plus 20%	--	5.1	--	22.4	--	12.1	2024
Eunice M/L	B-01	Turbine	83.2	26.3	50.0	50.0	39.2	18.4	39.2	18.4	Solar Taurus 60 component exchange to lower emissions to 25 ppm NOx and 25 ppm CO	25 PPM	25 PPM	25.4	10	57.8	16.3	2023
Eunice M/L	C-01	Turbine	25.4	30.9	50.0	50.0	50.8	28.9	25.4	28.9	Solar Taurus 60 component exchange to lower emissions to 9 ppm NOx and 25 ppm CO	9 PPM	25 PPM	7.0	10	18.39	20.9	2024
Eunice M/L	C-02	Turbine	25.4	30.9	50.0	50.0	50.8	30.7	25.4	30.7	Keep current NOx permit limits; Repermit to establish new CO limits	5.8	2.3	25.4	10	0.0	20.9	2023
Eunice M/L	C-03	Engine	36.5	9.1	0.5	0.6	17.1	20.6	17.1	9.1	Install low emission combustion (LE) technology to reduce NOx emissions; Keep current CO permit limits	0.5 g/hp-hr	2.1	17.1	9.1	19.4	0.0	2023
Monument Plant	A-01	Engine	125.0	11.8	3.0	0.6	29.0	5.8	29.0	5.8	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 70% CO reduction	3.0 g/hp-hr	0.8	29.0	3.5	95.97	8.3	2024
Monument Plant	A-02	Engine	125.0	11.8	3.0	0.6	29.0	5.8	29.0	5.8	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 70% CO reduction	3.0 g/hp-hr	0.8	29.0	3.5	95.97	8.3	2026
Monument Plant	A-03	Engine	125.0	11.8	3.0	0.6	29.0	5.8	29.0	5.8	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 70% CO reduction	3.0 g/hp-hr	0.8	29.0	3.5	95.97	8.3	2026
Monument Plant	A-04	Engine	17.1	19.7	3.0	0.6	29.0	5.8	17.1	5.8	Keep Current Permit Limits	3.9	4.50	17.1	19.7	0.0	0.0	2027
Monument Plant	A-05	Engine	17.1	19.7	3.0	0.6	29.0	5.8	17.1	5.8	Keep Current Permit Limits	3.9	4.50	17.1	19.7	0.0	0.0	2027
Monument Plant	B-01	Engine	38.5	44.0	3.0	0.6	66.0	13.2	38.5	13.2	Keep Current Permit Limits	8.8	10.0	38.5	44.0	0.0	0.0	2027
Pecos River	A-01	Turbine	233.0	35.0	50.0	50.0	56.5	28.4	56.5	28.4	Subject to AES for NOx; Keep current CO permit limits	--	8.0	--	35.0	--	0.0	2025
Pecos River	A-02	Turbine	233.0	35.0	50.0	50.0	56.5	28.4	56.5	28.4	Subject to AES for NOx; Keep current CO permit limits	--	8.0	--	35.0	--	0.0	2025
Pecos River	A-03	Turbine	233.0	35.0	50.0	50.0	56.5	28.4	56.5	28.4	Subject to AES for NOx; Keep current CO permit limits	--	8.0	--	35.0	--	0.0	2025
Rio Vista	A-01	Turbine	17.5	29.2	150.0	50.0	17.5	10.0	17.5	10.0	Keep current NOx permit limits; Reduce CO permit limits to actual plus 20%	4.0	4.5	17.5	19.9	0.00	9.3	2024
Rio Vista	A-02	Turbine	17.5	29.2	150.0	50.0	17.5	10.0	17.5	10.0	Keep current NOx permit value and CO actual plus 20%	4.0	4.5	17.5	19.9	0.00	9.3	2024
Rio Vista	A-03	Turbine	62.2	17.0	50.0	50.0	38.4	23.3	38.4	17.0	Solar Centaur 50 component exchange to lower emissions to 15 ppm NOx and 25 ppm CO	15 PPM	25PPM	13.4	13.6	48.8	3.4	2025
Roswell	A-01	Engine	78.8	78.8	3.0	0.6	98.5	19.7	78.8	19.7	Keep current NOx permit limits; Add Oxidation Catalyst for 80% CO reduction	18.0	2.5	78.8	11.16024	0.0	67.6	2025
Roswell	A-02	Engine	78.8	78.8	3.0	0.6	98.5	19.7	78.8	19.7	Keep current NOx permit limits; Add Oxidation Catalyst for 80% CO reduction	18.0	2.5	78.8	11.2	0.0	67.6	2025
Roswell	A-03	Engine	78.8	78.8	3.0	0.6	98.5	19.7	78.8	19.7	Keep current NOx permit limits; Add Oxidation Catalyst for 80% CO reduction	18.0	2.5	78.8	11.2	0.0	67.6	2025
San Juan River	A-01	Turbine	17.5	29.2	150.0	50.0	17.5	10.0	17.5	10.0	Keep current NOx permit limits; Repermit CO to lower permit limits by 60%	4.0	2.7	17.5	11.7	0.00	17.5	2024
San Juan River	A-02	Turbine	17.5	29.2	150.0	50.0	17.5	10.0	17.5	10.0	Keep current NOx permit limits; Repermit CO to lower permit limits by 60%	4.0	2.7	17.5	11.7	0.00	17.5	2024
San Juan River	A-03	Turbine	17.5	29.2	150.0	50.0	17.5	10.0	17.5	10.0	Keep current NOx permit limits; Repermit CO to lower permit limits by 60%	4.0	2.7	17.5	11.7	0.00	17.5	2024
Washington Ranch Storage	A-01	Engine	119.5	119.5	3.0	0.6	130.4	26.1	119.5	26.1	Keep current NOx permit limits; Add Oxidation Catalyst for 80% CO reduction	27.3	2.2	119.5	9.8	0.0	109.7	2027
Washington Ranch Storage	B-02	Engine	119.5	119.5	3.0	0.6	130.4	26.1	119.5	26.1	Keep current NOx permit limits; Add Oxidation Catalyst for 80% CO reduction	27.3	2.2	119.5	9.8	0.0	109.7	2027
Maljamar	1	Engine	154.5	14.1	3.0	0.6	57.9	11.6	57.9	11.6	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 80% CO reduction	3.0 g/hp-hr	0.6	57.9	2.7	96.60	11.4	2023 (CO) 2024 (NOx)
Maljamar	2	Engine	154.5	14.1	3.0	0.6	57.9	11.6	57.9	11.6	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 80% CO reduction	3.0 g/hp-hr	0.6	57.9	2.7	96.60	11.4	2023 (CO) 2026 (NOx)
Maljamar	3	Engine	154.5	14.1	3.0	0.6	57.9	11.6	57.9	11.6	Install low emission combustion (LE) technology to reduce NOx emissions; Add Oxidation Catalyst for 80% CO reduction	3.0 g/hp-hr	0.6	57.9	2.7	96.60	11.4	2023 (CO) 2026 (NOx)
Blanco	389	Engine	16.0	4.0	0.5	0.6	11.4	13.7	11.4	4.0	Install low emission combustion (LE) technology to reduce NOx emissions; Keep current CO permit limits	0.5 g/hp-hr	0.9	11.4	4.0	4.6	0.0	2023
Blanco	390	Engine	16.0	4.0	0.5	0.6	11.4	13.7	11.4	4.0	Install low emission combustion (LE) technology to reduce NOx emissions; Keep current CO permit limits	0.5 g/hp-hr	0.9	11.4	4.0	4.6	0.0	2023
Afton	A-1	Turbine	224.5	35.7	50.0	50.0	51.4	28.6	51.4	28.6	Subject to AES for NOx; Keep current CO permit limits	--	8.1	--	35.7	--	0.0	2025
Afton	A-2	Turbine	224.5	35.7	50.0	50.0	51.4	28.6	51.4	28.6	Subject to AES for NOx; Keep current CO permit limits	--	8.1	--	35.7	--	0.0	2025
Afton	A-3	Turbine	224.5	35.7	50.0	50.0	51.4	28.6	51.4	28.6	Subject to AES for NOx; Keep current CO permit limits	--	8.1	--	35.7	--	0.0	2025
Belen	A-1	Turbine	169.0	34.5	50.0	50.0	34.9	20.1	34.9	20.1	Subject to AES for NOx; Reduce CO permit limits to actual test results plus 20%	--	5.1	--	22.4	--	12.1	2024
Belen	A-2	Turbine	169.0	34.5	50.0	50.0	34.9	20.1	34.9	20.1	Subject to AES for NOx; Reduce CO permit limits to actual test results plus 20%	--	5.1	--	22.4	--	12.1	2024
Total (TPY)			1738.8	1253.2			1247.6	639.0	1064.6	601.8				1007.49	597.2	731.3	656.0	